ment of neuromyopathy's resuscitation and must be initiated from the beginning of hospitalization in the ICU to prevent further complications.

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P063-e

An application of mechanostat theory to protect muscle-bone unit in spinal cord injury

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Keywords: Mechanostat theory; Bone-muscle unit; pQCT; SCI

Background.– Evidence shows that if muscle force is below a certain set point, i.e. if muscles are paralyzed, bone tissue is lost. The goal of this cross-sectional study was to investigate Frost's mechanostat theory in spinal cord injured subjects.

Methods.– The study included 31 complete paraplegics (AIS A, mean duration of paralysis: 5.6 ± 6 years) divided according to the neurological level of injury compared with 50 controls. All were examined with peripheral quantitative computed tomography (pQCT XCT-3000, Stratec Medizintechnik, Germany) in the tibia. Images were taken at 66% of the tibia's length (bone area/muscle area ratio).

Results.– In controls muscle area was highly correlated with bone area obtained from p QCT. In paraplegics statistically significant higher ratios bone area per unit of muscle area vs. controls were found ($P < 0.001$).

Discussion.– The relationship between bone and muscle was consistent in able-bodied and predictably altered in those with spinal cord injury, a clinical disease affecting bone and muscle. The result could be partial explained by the bone steady state while muscle was already in steady state and suggests that we can interfere to the bone area/muscle area ratio many years after paralysis to protect bone and muscle in SCI subjects.

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P064-e

Stance and gait changes after medial head of gastrocnemius (MHG) bisection in patients suffering from popliteal artery entrapment syndrome (PAES)

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Background.– This pilot study has been organized to research the effects of MHGM bisection on the gait cycle of patients suffering from PAES. This syndrome is a cause of intermittent claudication and may lead to degenerative stenosis of the artery and ischemia. Encountering that gastrocnemius is a muscle that plays several roles from the mid stance to the heel off faces of the gait cycle it is important to research whether this therapy creates an unstable and uncomfortable gait. No bibliography exists so far regarding this correlation.

Methods.– Patients complaining for intermittent vascular claudication will be investigated with: Magnetic resonance imaging of the popliteal fossa to ensure the entrapment of the artery and examine the size of the gastrocnemius; Digital angiography to confirm the entrapment; Kinetic gait analysis to estimate the ground forces throughout the gait cycle, the centre of gravity for the body and the perception of balance. The imaging examinations will be performed before and 3 and 6 months after the surgery.

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P065-e

First results of kinematics analysis protocol on segmental shoulder motion with optoelectronic system for movement analysis in patients with rotator cuff syndrome

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Keywords: Kinematic analysis; Optoelectronic system; Movement analysis; Rotator cuff Syndrome; Segmentary shoulder's movements

Background.– In our kinematic analysis laboratory we have developed a protocol for angles measurement of the humerus and the scapula rotation during the segmentary shoulder's movements, with an optoelectronic system.

Methods.– This protocol has been validated on 30 healthy subjects and tested on 25 patients with rotator cuff syndrome documented by shoulder's clinical tests or echography. The aim of this work is to determine for which movement there are the most relevant restrictions on examined patients. For the movement analysis we have used an optoelectronic digital system (BTS SMART-DX) consists of two of infrared cameras directly connected to an integration box that contains appropriate software for data capture and motion analysis. The protocol used 8 markers positioned on anatomical points of subject's shoulder.

Results.– It has been possible to analyse the shoulder's movement limitations caused by rotator cuff syndrome. The most sensitive movements, compared to the normal class ones, are and humerus abduction (95.83° ± 20.04) and flexion (133.27° ± 12.56), extra-rotation (58.77° ± 19.33) and intra-rotation (69.47°° ± 17.98) while the less sensitive movements are scapula rotation during abduction and flexion (42.73° ± 1% and 48.63° ± 11%).

Discussion.– Next step is to use this protocol to follow how this angles change during the time in these patients after different medical or physical therapy.

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P066-e

Clinical value of musculoskeletal ultrasound in monitoring a novice treatment for acute plantar fasciitis: A note about capacitive resistive diathermy. Case report

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Keywords: Musculoskeletal ultrasound; Plantar fasciitis; Capacitive resistive diathermy; Monitoring treatment

Background.– Plantar fasciitis is the most common cause of heel pain afflicting nearly anyone stands for long time, the pain associated has a dramatic impact on physical mobility. Applying treatment with hope to speed up recovery after acute injury of plantar fascia is not yet justified by sufficient scientific data; the capacitive resistive diathermy (CRD) (Human Tecar®, Calco, Italy) has been suggested for early recovery of musculotendinous injuries while musculoskeletal ultrasound (MSUS) proved to be an excellent tool in diagnosing plantar fasciitis. Herein, we present a case of acute plantar fasciitis treated with 2 sessions of CRD, using MSUS for monitoring its efficacy.

Results.– A 52-years-old male with acute plantar fasciitis – diagnosed clinically and sonographically – was treated by CRD (Human Tecar®) followed by plantar